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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MCHENRY, KEVIN L

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 06/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/934,640

Applicant(s)

RYAN, WILLIAM R.

Examiner

Kevin L McHenry

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-31, 41-44, 47 and 48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-31 and 47 is/are allowed.
- 6) ☒ Claim(s) 41-44 and 48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 41, 43, 44, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 56-71,595.

JP 56-71,595 teaches a process of forming a join in which a first metallic member, or tube, with a first thickness and a first lip is joined to a second metallic member, or tube plate, of a second thickness. As shown in figures, this reference suggests that the second thickness is greater than the first thickness. This joining is accomplished by placing the first lip within a second lip of the second metallic member so that a tip of the first lip extends beyond the second lip. The tip and the second member adjacent the tip are heated by TIG welding torch to melt the tip and second member adjacent the tip to form a fluid tight welded joint upon cooling (see JP 56-71,595; particularly Figures 1, 2, 6, and 7; and abstract).

JP 56-71,595 does not specifically teach that the thickness of the tube is greater than the thickness of the tube plate, as suggested in the figures of JP 56-71,595.

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have made the thickness of the tube plate greater than that of the tubes. One would have been motivated to do so in order to provide a

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tube plate that would be structurally strong, could support its own weight and that of the tubes attached to it, and would provide a strong structural support for a heat exchanger.

3. Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 54-69,537 in view of Blumenberg (U.S.P. 4,369,911) or Ohnishi (U.S.P. 4,550,872).

JP 54-69,537 teaches process of forming a join in which a first metallic member, or tube, with a first thickness and a first lip is joined to a second metallic member, or tube plate, of a second thickness. As shown in figures, this reference suggests that the second thickness is greater than the first thickness. This joining is accomplished by placing the first lip within a second lip of the second metallic member so that a tip of the first lip extends beyond the second lip. The tip and the second member adjacent the tip are welded to melt the tip and second member adjacent the tip to form a fluid tight welded joint upon cooling (see JP 54-69,537; particularly Figures 1, 2; and abstract).

JP 54-69,537 does not specifically teach that the thickness of the tube is greater than the thickness of the tube plate, as suggested in the figures of JP 54-69,537, or that welding is accomplished by flame welding or any particular type of welding.

Blumenberg teaches a process of welding a tube to a sleeve by using flame or arc welding (see U.S.P. 4,369,911; particularly Figure 2; column 1, lines 36-42, 63-68).

Ohnishi teaches a process of welding a pipe to a surface by using a flame welding (see U.S.P. 4,550,872; particularly Figure 2; column 3, lines 6-18).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have made the thickness of the tube plate greater than that of the tubes. One would have been motivated to do so in order to provide a

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tube plate that would be structurally strong, could support its own weight and that of the tubes attached to it, and would provide a strong structural support for a heat exchanger. It would have been obvious to one of ordinary skill in the art to have used flame welding to join the tube and tube plate taught by JP 54-69,537 via flame welding in order to provide a means for joining a tube or pipe to a surface, as taught by Blumenberg or Onishi.

Allowable Subject Matter

4. Claims 28-31 and 47 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest a method of making a sealed recuperator unit by providing a first section with an embossment, providing a second section, placing a corrugated member in the embossment, placing the second member over the first section, and welding the second and first section together to form a sealed recuperator unit.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stafford et al. (U.S.P. 4,579,171), Borchert et al. (U.S.P. 5,292,056), Saperstein (U.S.P. 4,377,024), FR 2 566 306, Hackett et al. (U.S.P. 4,423,890), Spada et al. (U.S.P. 4,615,477), Broodman (U.S.P. 4,066,861), Calleson (U.S.P. 4,744,505), DeRisi et al. (U.S.P. 5,407,004), Murphy et al. (U.S.P. 5,036,913),

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and Le Gauyer (U.S.P. 5,275,236) are cited of interest for illustrating the state of the art in fabricating heat exchangers and in joining heat exchanger tubes to header plates.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (703) 305-9626. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



June 12, 2003



M. ALEXANDRA ELVE
PRIMARY EXAMINER